

Departmental Response: *Assessment of the Report of the SEAB Task Force on Federal Energy Management*



Introduction

Since 1975, the federal government has decreased the energy intensity of its buildings by more than 40%. Federal agencies have an opportunity and obligation to also reduce greenhouse gas (GHG) emissions in their operations and provide energy management leadership to the nation. The U.S. Department of Energy's Federal Energy Management Program (FEMP) plays a critical role in reducing energy use and increasing the use of renewable energy at federal agencies. With more than 300,000 energy-using buildings and structures and 600,000 road vehicles, the federal government is the nation's largest energy consumer. FEMP's goals include helping agencies reduce GHG emissions by 40% by fiscal year 2025 compared to fiscal year 2008 and ensure that at least 30% of federal electricity consumption is generated from renewable sources by 2025.

SEAB Report of the Task Force on Federal Energy Management

In March 2015, Secretary of Energy Ernest Moniz appointed the Secretary of Energy Advisory Board (SEAB) Task Force on Federal Energy Management to review the Federal Government's energy use and management. The impetus for the Task Force was President Obama's 2015 issuance of Executive Order (E.O.) 13693, "Planning for Federal Sustainability in the Next Decade." This Executive order sets new and more stringent goals for Federal agencies in a range of areas, including building energy efficiency, greenhouse gas emissions, use of renewable energy, water efficiency, motor vehicle efficiency, and energy performance contracting.

On September 22, 2016, SEAB approved the report of the Task Force on Federal Energy Management at its public meeting. The report analyzes ten federal energy management challenges and identifies opportunities to improve performance. The Task Force raised a number of issues:

- Reliance on executive branch-wide numeric targets with inadequate consideration of the cost of compliance in different agencies;
- Wide-scale absence of meters to guide investments in federal energy efficiency, including energy savings performance contracts, and to confirm the value of these investments ex post;
- Reluctance in some federal energy programs to adopt Randomized Control Trials and other advanced Evaluation, Measurement, and Verification (EM&V) techniques to validate programs intended to reduce energy use;

- The constraint that budget scorekeeping rules place on realizing least-life-cycle-cost contracts for federal buildings, facilities, and vehicles;
- Multiple and often conflicting objectives for federal energy management (e.g. least-cost energy services, carbon reductions, energy security, and the demonstration and validation of pre-commercial energy technologies and energy management practices to the private sector).

DOE Assessment and Response to Recommendations

The SEAB's Final Report makes many recommendations for further work on federal energy management programs to (1) ensure clarity and prioritization among the goals, and (2) establish metrics to judge program progress in improving cost-effective federal energy management. Recommendations from the report and the actions being undertaken by DOE are highlighted in the table below.

Ten Major Opportunities for Improved Federal Energy Management

Section 1. Federal Energy Goals

Recommendation: Assess Federal energy goals: are they a useful tool for Federal energy management?

SEAB Recommendation	DOE Response
1. The next administration, in the development and issuance of any Federal energy-related orders, directives, or guidance, should consider the pros and cons of numeric energy goals and potential alternative approaches to achieving desired environmental, economic, and security objectives.	DOE concurs but acknowledges the importance on continuing to track agency goal performance. Outcome based goals with annual measures of performance are necessary for identifying and focusing areas for improvement. Prescriptive requirements, such as 42 U.S.C. 8253 (f), ensure continued evaluation of Federal facilities to identify and implement cost-effective efficiency measures in a transparent way that encourages private sector investment in the form of performance contracts.
2. The next administration should consider pilot efforts to increase flexibility of compliance with Federal energy goals and related cost savings. This might allow, for example, smaller agencies to pool their resources in the joint development of a single larger renewable energy project that would count toward compliance with the relevant Executive order.	DOE concurs.
3. The next administration should also consider potentially recommending changes to underlying legislative requirements to provide greater flexibility in meeting congressional Federal energy management mandates.	DOE concurs but notes the importance of life-cycle cost-effective approaches underlying Federal energy management mandates.

SECTION 2: Evaluation, Measurement, and Verification

RECOMMENDATION: Improve Federal energy efficiency projects through advances in evaluation, measurement, and verification and randomized controlled trials.

SEAB Recommendation	DOE Response
1. Accelerate installation of individual building meters, smart meters, sub-meters, and sensors.	
a. As discussed above, only a small fraction of Federal facilities and buildings are metered,	DOE concurs.

SEAB Recommendation	DOE Response
<p>either with traditional or advanced meters. In order to be able to effectively deploy advanced energy analytic systems and improve evaluations of the efficacy of ECMs, Federal agencies should aggressively increase the installation of individual building meters (with an emphasis on smart meters) plus sub-meters, and sensors. Metering is required by EAct 2005, EISA 2007, and E.O. 13514 “to the maximum extent practicable.”</p>	
<p>b. FEMP can take two steps to address the existing lack of meters in Federal facilities as discussed in section 10: first, develop standard meter specifications for use across the Federal Government; and second, establish a fixed operations and maintenance savings amount resulting from metering that can be used in metering purchase decisions (so-called “deemed” savings). Based on these steps, FEMP could establish a government-wide meter-buying program using the deemed savings and standard meter specifications.</p>	<p>DOE concurs pending development of a “deemed savings” approach that achieves GC and Contracting’s concurrences.</p>
<p>c. FEMP should also amend its measurement and verification guidance for ESPCs to require all third parties engaging in long-term contracts for ECMs to install smart meters and sensors at the subject building and to deploy advanced energy analytics software. This requirement would include some of the costs of meter and software installation in the terms of the contract; provide continuous (as opposed to annual) monitoring of ECM performance; and automatically feed real-time energy usage data and analytics insights into the FEMP database.</p>	<p>DOE concurs, but acknowledges that cost could prohibit comprehensive metering in this fashion as ESPCs are typically set up to have minimal excess saving above the price paid to the contractor, thus little to no money is available to offset the added cost of the smart meters. DOE also notes that any measures implemented under an ESPC need to meet the requirements of 42 U.S.C. § 8287. Et seq. Furthermore, current M&V guidance from FEMP allows this type of installation as an option, but not as a requirement. FEMP does not have data on how many agencies use this option.</p>
<p>d. Federal agencies should fill in data gaps caused by a lack of meters. Building-level energy usage can be estimated by combining data from a facility-wide or campus-level meter with online surveying of building profile metrics (e.g., primary use information,</p>	<p>DOE concurs but acknowledges the cost challenges that agencies have in installing meters. Data estimation of this type should be used in specific</p>

SEAB Recommendation	DOE Response
number of occupants, total square footage, etc.). Until all Federal facilities are metered, sub-metered, and sensed, this technique should be used to create better models of building energy usage. Agencies can also request and automate the receipt of utility data for Federal buildings. Additionally, some Federal buildings may already have real-time energy use data through the utilities that supply them energy. For instance, utility participants in the Green Button program or the OpenEEmeter would already have granular use data. Where this is available, FEMP should request that the data be recorded in its database.	circumstances where the need for building analysis is present, rather than wholesale across all government buildings.
2. Conduct an advanced energy analytics system pilot implementation study run by FEMP, in coordination with OMB and CEQ.	DOE concurs and intends to include language in the FY18 budget request.
3. Use the advanced energy analytics system to benchmark facilities, track and prioritize energy efficiency projects, and support a near-real-time dynamic scorecard of pilot agency performance.	DOE concurs and intends to include language in the FY18 budget request.

SECTION 3: Energy Savings Performance Contracts

RECOMMENDATION: Improve and expand the use of energy savings performance contracts (ESPCs).

SEAB Recommendation	DOE Response
1. Set biannual contracting goals: You can't manage what you don't measure, and setting clear dollar-denominated contracting goals every 2 years sustains momentum and drives accountability. The current Federal goal of \$4 billion by the end of 2016 is driving ESPC performance, but there is no target beyond this point. Based on historical performance, this will result in a sharp decline in the ESPC project pipeline after the goal period ends, unless a new goal is established for the 2016–2018 period. To avoid this cliff and sustain the growth and development of the program, the Secretary of Energy should recommend ESPC contracting goals for the 2016–2018 period based on FEMP analysis of the potential future pipeline for Federal ESPCs.	CEQ already announced a new goal last October to raise the limit by 2 Billion over 3 years.
2. Maintain ESPC goals in dollar-denominated terms: ESPC targets measured in contract dollars work better than energy performance improvement targets due to ease of measurement and clear links to economic benefits. While relevant and important to larger	DOE concurs. EO 13693 asked agencies to provide annual agency targets for performance contracting for energy savings to be implemented in fiscal year

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<p>Federal goals, energy-based performance improvement targets require a decentralized and complex measurement and monitoring process that adds time and cost to implementation and may introduce error as utility bill data has to be entered at the local facility level (see section 3. The clarity and urgency of dollar-denominated contracting goals with specific deadlines has enabled managers to track ESPC goal achievement, identify problems early, and take corrective action.</p>	<p>2017 and annually thereafter.</p>
<p>3. Maintain consistent application of established annual scoring policy for ESPCs: Past performance demonstrates that inconsistent application of established annual scoring policies for ESPCs, largely by OMB, slows the contracting process, adds cost, and diminishes agency progress towards statutory and administratively established goals. An example, mentioned above and discussed in section 3, involves the scoring of EPSCs that incorporate renewable energy systems where an OMB decision has caused the suspension of this valuable tool for deploying renewables and potentially storage, microgrids, and other emerging technologies.</p>	<p>Scoring continues to be a challenge for certain ESPCs. Consistent consideration to scoring should be developed across government.</p>
<p>4. Resolve ESPC controversies: There are a number of current controversies regarding ESPCs that need to be resolved including, for example, the extent to which operational savings as opposed to energy savings can form the basis of a Federal performance contract. Another involves resolving the possibility of a "Termination for Convenience" (T4C) by the government. The specific language governing T4Cs has recently become an issue of debate and the financial institutions financing ESPC projects need resolution. FEMP has instituted a process to resolve this issue but not all agencies see DOE as the final arbiter of this issue.</p>	<p>ESPC is a highly accountable program, but is continually confronted with various minutia problems that grow into program halting issues. DOE has and will continue to address such issues as they arise.</p>
<p>5. Implement Section 432 of EISA: Section 432 of EISA requires Federal agencies to identify "covered facilities" that constitute at least 75 percent of their total facility energy use as subject to the requirements of the statute. Energy and water evaluations must be performed at each covered facility every 4 years to identify potential energy and water efficiency and conservation measures. EISA requires agencies to report progress toward these requirements using FEMP's EISA 432 Compliance Tracking System. Federal agencies should place a higher priority on this requirement. At the same time, it is important that these regular reviews be done cost-effectively, including using data from smart meters and</p>	<p>Agencies currently are required to fulfill section 432 of EISA. FEMP is open to specific suggestions on how to enhance implementation.</p>

SEAB Recommendation	DOE Response
building automation systems to reduce the need for on-site visits. E.O. 13693 explicitly provides this flexibility.	
6. Incorporate renewable energy in ESPCs: Encourage agencies to incorporate more renewable energy—as well as energy storage, microgrid, and other emerging energy technologies—into ESPCs in order to cut carbon emissions and improve resiliency of Federal facilities. New guidance is needed to: (1) clarify that Renewable Energy Credits can be used and sold as a legitimate funding source for ESPCs and other alternative financing mechanisms; and (2) allow for the monetization of the Investment Tax Credit under an ESPC that includes a lease agreement for the purchase of renewable energy (see section 5).	Various statutory and regulatory requirements and policy decisions may need to be addressed to implement this recommendation.
7. Allow electric vehicles and charging stations to be bundled with other traditional energy conservation measures: If specifically allowed as part of an ESPC, electric vehicles and their charging stations could help agencies meet energy and petroleum-reduction goals (see section 8).	The ESPC statutory authority (42 U.S.C. 8287, et seq.) does not authorize the acquisition of vehicles or implementation of charging infrastructure under and ESPC.
8. Ensure strong executive leadership: Ensure that the Federal Chief Sustainability Officer (FCSO) (formerly called the Federal Environmental Executive), working in concert with the Federal Chief Performance Officer, Deputy Director of OMB and FEMP, provides strong leadership of Federal-wide goals for ESPC performance, in particular, measuring and managing agency performance to support accountability and recognize success. Maintaining the leadership of the FCSO has proven crucial for convening agencies, measuring progress, celebrating success, implementing corrective action when needed, and linking performance to agency budgets (see section 5). Ongoing tracking and reporting of the Federal ESPC project pipeline has enabled the FCSO to identify “stuck” projects, diagnose challenges, and implement continuous improvement. Sustaining this practice will support the continued improvement of the ESPC program. This should also involve agency Chief Sustainability Officers (CSOs) who are key to elevating the opportunities and challenge of Federal energy management, and ESPCs in particular, within their individual agencies. These CSOs must place a priority on their role as a high-level champion for Federal energy management in their agencies (see section 10 regarding the Federal Energy Management Program).	DOE has observed that strong support of the program at the highest leadership levels makes projects go faster and perform better. Leadership written statements to the agency significantly aid progress.

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<p>9. Increase agency capacity for ESPC project development and contracting: Building on existing DOE FEMP-led training programs, explore developing a FEMP “Center of Excellence” to cross-train agency personnel on ESPC project development and contracting. This would leverage the authorities of the Intergovernmental Personnel Act to provide on-the-job experience to augment seminars and other programming.</p>	<p>DOE concurs. FEMP is partnering with USACE to offer turnkey services.</p>
<p>10. Reduce ESPC project development timelines and cost: Align the ESPC program with OMB's Strategic Sourcing Initiative to drive greater consistency in Federal ESPC contracting, thereby reducing the timelines and cost of project development for both Federal agencies and industry. This would involve work with OMB's Office of Federal Procurement Policy to develop a plan for aligning ESPC program implementation with the Strategic Sourcing Initiative that encourages agencies to join together to negotiate the best deal for the taxpayer and to eliminate inefficiencies from the contracting process. This effort should also encourage ESPC contractors to work in concert with Federal agencies to implement agency supply chain greenhouse gas management goals, as directed by E.O. 13693.</p>	<p>DOE will look into this coordination, but is not clear on how agencies can join together to negotiate the best deal as ESPCs involve site audits and selection processes that are unique to each facility.</p>
<p>11. Accelerate agency approval process for ESPC projects: Once a project has been developed and approved by a Federal site, lengthy approval processes from headquarters up the chain of command can add unnecessary delays. Awareness among agency leadership on the importance of ESPC projects is vital to reducing timelines and cost. Agency CSOs can help significantly with this objective. (see section 10)</p>	<p>As was stated earlier, Agency Senior Leadership written affirmation of support may help with this delay.</p>
<p>12. Improve oversight of ESPC projects through clearer reporting of savings, improved training, and systematic evaluations of portfolios, among other things. GAO's 2015 review of Federal ESPCs, discussed above, recommends that the Secretary of Energy direct FEMP to evaluate existing training of Federal workers and their oversight of ESPC contractors' measurement and evaluation of contract performance.</p>	<p>DOE concurs.</p>
<p>13. Improve data and performance management systems: As stressed in section 2 of this report, better data and improved performance monitoring are critical to effective Federal energy management. FEMP should amend its measurement and verification guidance for</p>	<p>DOE concurs, same comments as made in section 2 for this same topic.</p>

SEAB Recommendation	DOE Response
ESPCs to require all third parties engaging in long-term contracts for ECMs to install smart meters and sensors at the subject building. This requirement would allow no- or low-cost measures to pay for the costs of installation to the terms of the contract, provide continuous (as opposed to annual) monitoring of conservation measure performance, and feed real-time energy usage data into the FEMP database (see section 10).	
14. Seek opportunities to align energy performance contracting with related performance improvement and savings: Emerging research from leading institutions including the Centers for Disease Control is demonstrating strong linkages between building performance and human health and wellbeing. For example, indoor air pollution has demonstrated linkages to chronic disease such as diabetes, hypertension, and heart disease. Harvard University is illuminating connections between lighting quality and healthy circadian rhythms. Moreover, E.O. 13693 directs that Federal employee and visitor wellbeing be addressed in the Guiding Principles for High Performance and Sustainable Buildings. DOE, OMB, and other Federal players should explore opportunities to align ESPC projects with building improvements that support human health and wellbeing, improve the agency personnel productivity, and reduce agency costs due to absenteeism and similar issues. This might involve launching a challenge to Federal agencies to identify at least one pilot ESPC project that, in addition to energy savings, also supports the wellness of Federal employees and visitors and identifies performance measures to demonstrate results. Part of this overall effort should involve developing and applying better financial measures of non-energy benefits such as health, security, and resilience.	DOE concurs that including non-energy benefits such as health and well-being measures would offer substantial benefits to facility improvements. However, it must be noted that the “health” improvements must be funded in the budget, not through an ESPCS. The ESPC authority only authorizes implementation of energy and water conservation measures and can only be paid from funds appropriated or otherwise made available for the payment of energy, water, or wastewater treatment expenses (and related operation and maintenance expenses) see 42 U.S.C. 8287, 8287a, and 8287c).

SECTION 4: The Federal Real Estate Footprint

RECOMMENDATION: To reduce the Federal carbon footprint, reduce the Federal real estate footprint.

SEAB Recommendation	DOE Response
1. DOE should make reducing the Federal real estate footprint an explicit part of its strategy for improving Federal energy performance.	DOE concurs with language. Space requirements are determined at the Agency Level based on an analysis of their current and future mission requirements. Recommended language “DOE note that maintaining the minimum real property

SEAB Recommendation	DOE Response
	<p>footprint consistent with Agency mission and maintaining that property in good operating order helps minimize energy consumption.”</p>
<p>2. DOE should lead by example by reducing its own real estate footprint. One opportunity for DOE to lead by example is the planned move of DOE’s headquarters from the Forrestal Building, which GSA plans to dispose of through a sale or exchange of the property, to another location. DOE should adopt an aggressive goal for space utilization in the new facility, in part by relying more on open offices and shared space where appropriate. (The Advanced Research Projects Agency-Energy’s offices, located in leased space near Forrestal, are a model in this regard.) DOE should work with GSA to identify other opportunities to reduce its real estate footprint outside of Washington, D.C. In keeping with the first recommendation, DOE should publicize its actions and challenge other agencies to do the same in the name of improved Federal energy performance.</p>	<p>Do not concur. Since the Department leases the Forrestal building from GSA, DOE has been actively working with GSA on the future of the Headquarters facilities. While the potential exchange of the Forrestal building was conserved and not accepted by GSA, ongoing negotiations between the agencies are continuing.</p>
<p>3. DOE should work with GSA to develop a “Space Savings Performance Contract,” modeled after the Energy Savings Performance Contract (ESPC), which uses the potential savings from space consolidation to pay for the up-front investment required to achieve those savings. Under an ESPC, an energy service company (ESCO) pays the upfront cost of an energy conservation measure in a Federal facility, and the ESCO is then repaid with the resulting utility savings to the Federal Government. Similarly, if a private developer were to front the cost of making a Federal facility more space-efficient, the facility could accommodate Federal tenants that are now in leased space, and the developer could be repaid from savings to the government in the form of reduced leasing costs.</p> <p>GSA and DOD are both making it a priority to move Federal agencies out of (more expensive) leased space and into (less expensive) Federal space. However, because this typically requires capital investment in the “receiving” building, Federal funding is a major constraint. If GSA and DOD could take advantage of private investment through a “space-savings performance contract,” modeled after an ESPC, they could pursue this 49 priority effort far more aggressively. Importantly, when GSA invests in making a Federal facility more space efficient, it does so in a way that significantly enhances the facility’s energy efficiency. Thus, a space-savings performance contract would be important in its own right as a tool for achieving large-scale improvements in the energy efficiency of</p>	<p>DOE has been exploring with GSA whether a space savings ESPC concept can be developed that meets applicable legal requirements.</p> <p>Other items are not FEMP issues; Response should be provided by others.</p>

SEAB Recommendation	DOE Response
<p>Federal facilities.</p> <p>GSA believes it has the legislative authority to pursue this strategy if OMB blessed it. The key issue is budget scoring. In the case of ESPCs, where Federal agencies had the legal authority to engage in energy performance contracting, OMB issued a pair of memoranda that clarified that such contracting was consistent with budget scoring rules (Appendix B of Circular A-11). A similar approach might be called for here.</p> <p>FEMP should work with GSA to try to develop an approach to this idea that OMB would be comfortable with in terms of budget scoring. One approach might be to try the idea out on a pilot basis, using a highly visible facility, such as the Department of Agriculture's headquarters, where there are large potential gains from improved space utilization as well as increased energy efficiency.</p>	

SECTION 5: Federal Renewable Energy Procurement

RECOMMENDATION: Improve Federal procurement of renewable energy.

SEAB Recommendation	DOE Response
<p>1. DOE should make it a high priority to resolve the industry uncertainty regarding OMB and IRS requirements that has effectively eliminated the ESPC ESA as a contracting tool for renewable energy projects.</p> <p>Federal agencies are relying heavily on ESPCs to improve the energy performance of their facilities, both because they lack the resources to fund such improvements directly and because the Administration has issued ambitious goals for energy performance contracting. Agencies need the ability to contract for renewable energy as part of the ESPC process.</p> <p>Although FEMP is working actively to resolve the apparent conflict between OMB and IRS requirements, key players outside of DOE are not treating it as a priority. DOE should elevate this issue internally, and within the White House and OMB, in an effort to resolve it within the next few months.</p>	DOE is currently working to resolve this issue.
2. FEMP and the National Renewable Energy Laboratory (NREL) should identify opportunities	Concur, however FEMP believes it may be more

SEAB Recommendation	DOE Response
<p>to use the Fort Huachuca/Georgia 3X30 model for renewable energy development on other Federal campuses (including other military bases). DOE should work with OMB to set a concrete goal for the number of such transactions the Federal Government will award by the end of 2016, 2017, and 2018.</p> <p>FEMP has been focusing on large campus energy management, recognizing that most Federal energy use occurs on campuses. DOD accounts for about half of the top 450 Federal campuses as measured by energy use, followed by Veterans Affairs (107), DOE (27), Department of Justice (26), and GSA and NASA (10 each). With an emphasis on the campuses that consume the most energy, FEMP has been looking at opportunities for renewable energy development, using (among other things) NREL’s Renewable Energy Optimization platform.</p> <p>To complement this effort, FEMP and NREL should identify those campuses and military bases that are best suited to the use of the Fort Huachuca/Georgia 3X30 contracting tool (see above), which DOD’s experience suggests is an expedient way to deploy large-scale, on-site renewable energy capacity. While the amount of energy that a campus consumes (FEMP’s current focus) can be a secondary consideration in choosing sites, the primary consideration should be the relative suitability of alternative sites for this demonstrated contracting approach. Factors include: whether the campus/base is covered by an AWC; state RPS requirements; proximity to transmission lines; and the cost of needed upgrades to the transmission or distribution infrastructure.</p> <p>Because such a transaction can be completed in a matter of months, not years, DOE should work with OMB to set a concrete target for the number of transactions that the Federal Government will award by the end of 2016, 2017, and 2018.</p>	<p>efficient to revise existing guidance relating to the current federal renewable energy goal to permit the “3x30” and related projects that enable new renewable generation sited on federal lands to count toward the current renewable goal—rather than add a new goal.</p>
<p>3. DOE should explore the potential for other PMAs to play the same valuable role in renewable energy that WAPA plays.</p> <p>WAPA is the only PMA that purchases renewable energy resources on behalf of Federal agencies—a set of activities for which it receives annual funding from FEMP. Although each PMA has its own organic statute, it seems quite possible that other PMAs have the equivalent authority even though they are not currently exercising it.</p>	<p>Section 3 is not an EERE responsibility. Another part of DOE is providing a response.</p>

SEAB Recommendation	DOE Response
<p>DOE’s General Counsel should examine the organic statutes of the other PMAs (Bonneville Power Administration, Southwest Power Administration, and Southeast Power Administration) to determine whether their broad authorities, like WAPA’s, cover the purchase of renewable energy resources on behalf of Federal agencies in their respective service territories. If so, FEMP should provide financial support, as it does with WAPA, to encourage such activities.</p>	
<p>4. FEMP should work with DOD to explore incorporating standard clauses into the DFARS so that the parties to a PPA negotiation can focus on the material issues. FEMP should consider doing something similar for the FAR.</p> <p>The defense contracting process is a major barrier to the use of Section 2922a PPAs. If the process were less complex and time-consuming, the military services would find more opportunities to use it, and the services might receive more attractive PPA prices in the end. Although civilian agencies have made little use of their PPA authority for other reasons, the FAR creates challenges for them as well.</p> <p>DOD has taken steps to improve its process. The Services are relying increasingly on the Defense Logistics Agency (DLA), which does centralized acquisition of fuel and other commercial commodities, to negotiate their Section 2922a contracts. DLA strives for uniformity across transactions (the fact that each service has a different approach creates a challenge for industry). Moreover, DLA considers energy purchased under Section 2922a to be a commercial item, which allows for more flexibility in the process. In addition, several DOD offices have drafted standard language for a Section 2922a contract, based in part on input from industry. Most significant, the Office of the Secretary of Defense provided a draft template to DLA and the services, and it precleared any Section 2922a contracts insofar as the final document relies on the language in the template.</p> <p>FEMP should work with DOD to explore the utility of incorporating various standard clauses, most of which are not unique to PPAs, into the DFARS. These clauses deal with such issues as environmental protection, insurance, security, and land access. Arguably, including these clauses in the DFARS would allow the parties to focus on the material issues in a transaction such as the financing. If appropriate, FEMP should lead a parallel effort aimed at the FAR.</p>	<p>DOE will investigate.</p>

SEAB Recommendation	DOE Response

SECTION 6: Federal Power Marketing Administrations

RECOMMENDATION: Increase the role of the Federal Power Marketing Administrations in renewable energy deployment.

SEAB Recommendation	DOE Response
<p>The Secretary of Energy should work with the PMAs to develop and build public support for a series of PMA initiatives that could help achieve several key energy policy goals, including:</p> <ol style="list-style-type: none"> 1. Helping utilities comply with the Clean Power Plan and state Renewable Portfolio Standards 2. Enhancing electric grid reliability 3. Diversifying the electric generation resource mix 4. Expanding transmission capacity for renewables. <p>These initiatives should also benefit the PMAs and their traditional customers by</p> <ol style="list-style-type: none"> 1. More efficiently utilizing the transmission grid 2. Increasing access to lower-cost power that can be used to supplement the output of federally owned hydropower dams 3. Increasing economic development, especially in the rural areas served by the PMAs. <p>The Secretary of Energy and the PMAs should convene a series of stakeholder meetings to launch these efforts. Beyond helping to meet these broad-ranging goals, there are several specific initiatives outlined below that the PMAs could pursue to promote increased development of renewable electric generation, particularly in the western United States where the renewable resource potential is sizable but several barriers exist, including an inadequate transmission grid.</p> <p>Pursuing these initiatives at this time makes sense for several reasons: the cost of renewable energy sources, like wind and solar, has dropped dramatically in the last few years putting them more closely in line with fossil and hydropower generation; the need for new transmission capacity, especially in the West, has risen substantially; the mainstream business and finance community has embraced the deployment of renewables in an unprecedented fashion; and the climate imperative looms large and, importantly, may cut the water available</p>	<p>See page 27</p>

SEAB Recommendation	DOE Response
<p>for hydropower generation at Federal dams.</p> <p>At the same time, it will be critical for the PMAs and the Department to pursue this strategy in a coordinated and transparent fashion. As Secretary Chu experienced, emotions run deep among PMA customers, other stakeholders, Members of Congress representing the PMA regions, and other government officials. The Secretary and the PMA administrators must lay the groundwork with all interested parties, especially the northwest congressional delegation and state governors, and convince PMA customers and stakeholders that the actions contemplated will not adversely affect their electric rates or reliability of service and that, in fact, participation by PMAs in these initiatives can further advance economic development, cleaner air, lower rates, and better service.</p> <p>Below are specific policies and actions that BPA and WAPA should consider pursuing to benefit renewable energy development, grid expansion, and electricity market coordination, especially in the West. SWPA and SEPA are probably each too small to have a sizable impact on broad-scale renewable energy development in the regions they serve, but they may be able to work with the private sector and DOE leadership to facilitate development and deployment of specific renewable energy and transmission projects.</p>	
<p>In light of these sorts of situations and as discussed above, DOE and the PMAs must use their transmission development authority in a coordinated and transparent fashion that both addresses preference customer concerns about electricity rates and considers landowner interests, while at the same time advancing national economic, security, and environmental interests in deploying clean low-cost power.</p>	
<p>BPA and WAPA should also participate more closely with other regional utilities in the various transmission-planning processes occurring in the region in the aftermath of FERC Order No. 1000 that reforms the Commission’s electric transmission planning and cost allocation requirements for public utility transmission providers.¹⁰⁵ To date, BPA, in particular, has avoided engaging in an ongoing regional transmission process involving investor-owned utilities in the Northwest primarily for fear of being subject to Order No. 1000’s transmission cost-allocation mechanisms.</p>	

SEAB Recommendation	DOE Response
BPA and WAPA should also review their existing practices and identify further actions that the PMAs could take to promote renewable development without impairing their ability to satisfy their statutory responsibilities. All of the PMAs should maximize their acquisition of renewable energy when purchasing power to supplement their hydropower resources. BPA engages in the most significant level of non-hydro resource acquisitions, but even SWPA, SEPA, and WAPA are required to purchase power to make up for inadequate hydropower levels caused by droughts. Some of these purchases should come from renewable resources, particularly as these resources are increasingly cost competitive.	

SECTION 7: Renewable Energy Development on Federal Lands

RECOMMENDATION: Address regulatory and program barriers to expanding renewable energy development on Federal lands.

SEAB Recommendation	DOE Response
1. DOE should partner with DOI, which has primary responsibility over permitting of renewable energy projects on public lands, to conduct a collaborative, consensus-oriented process geared toward lowering the risk of delay, litigation, and uncertainty surrounding wildlife impacts from renewable energy development. Leaders from conservation organizations and industry have already joined together at the highest level to signal agreement on the importance of this issue and have offered a suite of recommendations to DOI and FWS for ensuring species conservation while increasing certainty for renewable energy. This process should not only encompass FWS work on incidental take, but should also consider the appropriate application of categorical exclusions and programmatic environmental impact statement activity under NEPA.	DOE concurs, but would add that there are other environmental/permitting concerns beyond wildlife to consider when developing renewable energy projects.
2. DOE can also work with DOI to prioritize the formulation of a new and improved permitting roadmap for future renewable energy development on public lands by convening a joint dialogue with stakeholders and developers to discuss roadblocks hindering permitting success, while also assessing lessons learned from the previous 6 years of permitting utility-scale projects. Historical precedent has already demonstrated that DOE can help DOI advance the effective permitting of renewables on the Federal estate. When DOE partnered with BLM in developing a solar zone framework, the funding support that DOE provided helped channel resources in a manner that ensured that projects permitted in zones would have the greatest chance of success. Similarly, there is an opportunity for DOE and DOI to develop additional improvements to the permitting process for the next generation of clean energy projects. The	DOE concurs.

SEAB Recommendation	DOE Response
outcome of this process should be ready for use by the incoming Administration.	
3. DOE should take a leading role and increase research funding on both technological and mitigation practices that can assure continuously improving levels of species conservation. DOE should work more closely with, and support, data collection and research by the resource agencies concerning biological risk assessment, population and community level impacts, and more creative and effective mitigation policies, incentives, and practices. It is worth emphasizing the critical role that effective mitigation can play in accelerating permitting, including by diffusing controversy.	DOE concurs and, as an example, is already engaging in these efforts for wind and intends to continue to do so.
4. Assuming a reasonable consensus emerges on improvements to regulations and management practices that produce practical success on the ground in implementation, and consistent with DOI's responsibilities as the lead agency under the relevant land management and wildlife statutes, DOE should work with DOI and other agencies, stakeholders, and Congress to consider ways to incorporate the improvements into legislation governing clean energy development and species conservation on public lands. Such legislation would provide sustained certainty for clean energy development on public lands.	DOE would suggest changing the recommendation, not legislation.

SECTION 8: Alternative Fuel Vehicles

RECOMMENDATION: Improve Federal deployment of alternative fuel vehicles.

SEAB Recommendation	DOE Response
1. Recommendations to Lower the Cost of AFVs and Make Them More Competitive With Conventional Vehicles	DOE notes that agency budgets do not carry the Social Cost of Carbon.
a. Account for the full life-cycle cost of vehicles in making purchase decisions: When fleet managers choose which vehicles to buy, they often pay greater attention to the upfront capital costs than to the O&M costs. In some situations, funding for these cost categories may even come from separate accounts. The government should ensure that Federal fleet managers examine the full life-cycle costs of purchasing or leasing and also operating and maintaining a vehicle, when making purchase or lease decisions. In 2014, the General Services Administration (GSA) awarded a new 5-year contract to United Parcel Service and Federal Express for the delivery of small packages for government clients. As part of its efforts to reduce the	

SEAB Recommendation	DOE Response
<p>government's carbon footprint, GSA directed bidders to account for the carbon footprint of a company's services through the modeling of the government's Social Cost of Carbon (SCC) associated with that company's expected shipments under the contract. This requirement favored bidders who used AFVs with smaller carbon footprints than conventional vehicles. Likewise, when making decisions as to what vehicles to purchase or lease for use in the Federal fleet, agencies should account for the vehicle's carbon footprint by using the Federal Government's estimate of the SCC to determine the lifetime social cost of each vehicle technology, and then directly incorporate this figure into the agency's total cost of ownership calculation. This approach will encourage the use of AFVs because their higher acquisition costs are not only offset by their lower O&M costs but will also take into account the benefits of their smaller carbon footprint. This approach also directly responds to the direction in E.O. 13693 to reduce fleet-wide per-mile GHG emissions by 30 percent by FY 2025, relative to a 2014 baseline.</p>	
<p>b. Find ways to directly offset the higher upfront costs of plug-ins: The military services have been exploring ways to cut the overall costs of EVs and achieve cost parity with conventional vehicles. Beginning in 2010, the Air Force led a Department of Defense (DOD)-wide effort that determined that Vehicle-to-Grid (V2G) services were an attractive model for achieving this objective in the military's fleet of 200,000 non-tactical vehicles. V2G provides the grid operator a source of frequency regulation and peak demand shaving and enhances military mission support functions such as back-up power to critical infrastructure, mobile power in remote locations, and micro-grid optimization. In the process, V2G generates revenue for the military services and, thereby, cuts the overall cost of PEVs. Building on these opportunities, the Los Angeles Air Force Base now serves as the flagship location for a DOD demonstration project that has replaced its entire general service vehicles with electric vehicles. Fort Hood and Joint Base Andrews are also participating in this project. DOD leases conventional trucks from GSA but pays for the electric vehicle conversion. If the technology proves feasible and reliable, DOD and GSA will work to establish the conversion kits as an equipment item on the GSA schedule.</p>	<p>DOE recognizes that there may be benefits associated with plug-in ownership that have not been fully explored.</p>
<p>c. Develop new financing models to cut EV costs: GSA worked with the Air Force and utility owner-operator Southern Company to create a financing model that reduces the cost of EV sedans and pays for the required infrastructure, e.g., charging stations. Southern used GSA's area-wide public utility contract authority (see section 5) to incorporate the additional infrastructure costs into the monthly electricity bill, allowing the utility and the Air Force to</p>	<p>DOE is working with the Army to pursue similar projects.</p>

SEAB Recommendation	DOE Response
<p>amortize these significant expenses over time. The end result was the installation of a fast-charging station near multiple Air Force installations in Southern Company service territory (Georgia, Alabama, Mississippi, and the Florida Panhandle). In exchange, the Air Force committed to a baseline level of use sufficient to pay back the utility's investment. Any public use of the charging station is expected to generate a profit for the utility. Under this arrangement, the Air Force was able to bring the overall cost of EVs in line with the cost of conventional vehicles. This model should be replicable by other Federal agencies and can be expanded in any region where GSA area-wide agreements exist with a willing utility partner.</p>	
<p>d. Work with states on bulk purchases: Allowing Federal agencies to work with states to make bulk purchases can drive down costs. In 2012, Oklahoma and Colorado led a multi-state agreement in which states issued a joint request for proposals for the purchase of natural gas vehicles for themselves and local governments. Automakers responded by offering several vehicle models at a savings of up to \$8,000 per vehicle over the best previously available price. While the program ended because most participating states could not find ways to conveniently fuel natural gas vehicles, Oklahoma is planning to initiate a new agreement that is broadened to include all AFVs.</p>	<p>GSA negotiates vehicle acquisitions with OEMs and has succeeded in securing a deal for the 2017 Ford Focus Electric (BEV) at \$16,160 (\$13,000 lower than the MSRP).</p>
<p>DOE's Federal Energy Management Program (FEMP) and GSA should work together and explore the opportunity for the Federal Government to join with the states in seeking to lower the cost of AFVs for fleet managers at all levels of government. If FEMP and GSA identify legal obstacles to entering into such agreements with the states, they should report them to the Secretary of Energy and the GSA Administrator and recommend changes to the applicable laws, regulations, or requirements that would allow them to work with the states.</p>	<p>DOE would support GSA in efforts to lower the cost of AFVs.</p>
<p>e. Consider appropriating funds to directly offset the incremental cost of AFVs to agencies: As explained above, AFVs often have high upfront capital costs that are offset over a vehicle's lifetime by lower O&M costs. While the lower O&M costs will help lower vehicle life-cycle costs, agencies may not have the funds available to incur these higher initial costs because budgets are tight, or because capital and operating costs are funded separately and one cannot easily offset the other. This situation may make it difficult for a Federal fleet manager to purchase AFVs. GSA and DOE should seek funding to establish a program that offsets some portion of the</p>	<p>This is not a decision for DOE to make.</p>

SEAB Recommendation	DOE Response
<p>incremental costs of AFVs and any associated infrastructure purchased by Federal agencies. Directly appropriating funds for that purpose would allow agencies to procure AFVs without taking scarce funds away from agencies' core missions. Such a program could also provide data that would provide more transparency regarding the cost of using AFVs in place of conventional gasoline-powered vehicles. While finding funds for this purpose is likely difficult in the current environment, there is value in making transparent the opportunity cost of the current approach.</p> <p>f. GSA and DOE should report on key issues in Federal AFV procurement: The GSA and FEMP should examine the various financing, bureaucratic, oversight and other potential obstacles to Federal AFV deployment and make recommendations on how to:</p> <ul style="list-style-type: none"> i. Resolve the difficulty that fleet managers have in paying for the incremental cost of AFVs, and the extent to which those difficulties result in most agencies choosing flexible fuel vehicles, the AFVs with the lowest incremental cost, and then operating them on gasoline instead of E85. This analysis should include the regularly occurring situation where the separation of capital and operating expenses undermines the ability to make the lowest cost decision. ii. Consider the carbon footprint, and related costs, of different vehicles and how this information might be better reflected in the data that Federal fleet managers use to make vehicle purchase decisions. iii. Provide opportunities for Federal agencies to lease vehicles at a lower cost from third parties as compared to GSA. iv. Overcome technical or policy obstacles to lowering the life-cycle cost of using an AFV, including how, for example, uncertainty about the residual value of vehicle batteries affect life-cycle vehicle costs. v. Increase opportunities for Federal agencies to monetize Federal and State tax credits, rebates, and/or grants. 	<p>DOE agrees that although incremental costs help agency fleets understand the capital cost impacts of acquiring AFVs, agencies should compare full life-cycle costs (including SCC) in making vehicle purchase decisions. Recommend addressing this as described under 1.e.</p> <p>DOE has publicized the Argonne AFLEET tool, which accounts for carbon and local air pollutants. GSA leases vehicles at very competitive rates. Other entities, including Southern, do compete through the GSA Schedule 751.</p> <p>GSA leads vehicle acquisition effort; however DOE can help in identifying opportunities to lower life-cycle costs.</p>

SEAB Recommendation	DOE Response
<p>vi. Identify opportunities for Federal agencies to acquire AFVs through energy savings performance contracts.</p>	<p>GSA vehicle acquisition effort, not DOE or FEMP.</p> <p>DOE notes that 42 u.S.C. § 8287, et sec does not authorize the acquisition of vehicles under an ESPC.</p>
<p>2. Recommendations to Increase the Use of Alternative Fuels and the Availability of Alternative Fueling Infrastructure</p> <p>a. Increase use of E85 in the Federal flexible fuel vehicle fleet: The Federal Government owns approximately 196,000 flexible fuel vehicles, which agencies purchased to meet AFV requirements. However, as mentioned above, the agencies generally do not use E85 in the vehicles because this fuel is often not conveniently available near where the vehicles are used. In 2015, for instance, 55,000 AFVs were waived from meeting EPA 2005 alternative fuel use requirements because the vehicles were housed more than 5 miles or a 15-minute drive from an E85 refueling station, and additional flexible fuel vehicles that did not obtain waivers may still have not used E85. As part of the waiver process, agencies submit addresses where exempt vehicles are located, so anyone can easily identify where there are high concentrations of federally owned flexible fuel vehicles without access to E85. The Federal Government should identify 20 areas where the government has a high concentration of flexible fuel vehicles without access to E85, and either contract with private fuel providers for convenient access to E85 for the vehicles or should install its own fueling infrastructure, so that as many government-owned flexible fuel vehicles as possible can operate on E85.</p> <p>b. Right-size charging infrastructure: Commercial facilities often focus on installing revenue-grade Level-2 charging infrastructure to charge PEVs because of the faster charging times and the availability of chargers that measure the power, so that the provider can recover the cost of the power. Agencies should, however, explore the opportunities for non-revenue grade Level-1 charging infrastructure, which is far less costly, even though it charges more slowly and does not meter the power used. With the average vehicle in the Federal fleet traveling less than 35 miles a day, many vehicles can meet their agencies' needs with slower overnight charging, instead of faster charging during the day. Moreover, the incremental cost of charging</p>	<p>DOE agrees, and notes that many drivers miss opportunities to use alternative fuel when a station is within 5 miles of their fueling events. DOE and NREL built FleetDASH to identify these missed opportunities. Aided by FleetDASH, federal fleets increased E85 use by 4.5% (or over 580,000 GGE) between FY14 and FY15. The 12 agencies that included planned actions for using FleetDASH in their FY15 annual OMB Scorecards increased E85 usage by over 7%.</p> <p>DOE is providing guidance to agencies to minimize costs while meeting EV charging needs in selecting and deploying charging infrastructure. DOE also recognizes the opportunity to right-size charging infrastructure in supporting workplace charging, and is working with agencies and the Council on Environmental Quality to help</p>

SEAB Recommendation	DOE Response
<p>infrastructure that collects data to charge customers for the power they use often exceeds the cost of the power itself. Agencies should identify where it would be more cost effective to buy less expensive infrastructure and not charge for the power. If government regulations prove an obstacle to not charging for power, then GSA and DOE should propose changes to the Administration and Congress.</p>	<p>remedy the situation.</p>
<p>c. Expand utility partnerships to develop charging infrastructure: Utilities are good partners to find the lowest cost electricity rate for EV charging using their rate analysis tools. Utilities are also potential partners for charging infrastructure. There are a multitude of utility programs that invest in beyond-the-meter charging infrastructure. Southern California Edison, Southern Company, and Kansas City Power & Light have existing programs, while Puget Sound Energy, Pacific Gas & Electric, and San Diego Gas & Electric have proposed programs. Federal agencies can also help by recommending to public utility commissions in all states that they expand utility-charging infrastructure investments. Federal agencies can also explore the use of utility energy service contracts (UESCs) and area-wide contracts (see Section 5). UESCs are typically used for distributed energy resources, energy efficiency, and water efficiency improvements. UESCs are limited-source contracts between Federal agencies and their serving utility, typically using GSA or Site-specific arrangements. There is precedent for EV-charging stations to be included as part of larger projects. The utility develops and builds the project paid for by the Federal agency with their choice of appropriated funds or financed through a utility-arranged third party. Area-wide contracts are another way Federal facilities may be able to pay for EV infrastructure as a service through a fixed fee or tariff with the local utility owning and operating the infrastructure.</p>	<p>DOE currently is working with utilities to expand deployment of charging infrastructure to support federal fleets, and maintains a vast network of utility connections through its Utility Energy Service Contract program.</p>
<p>d. Examine Federal facilities and interstate highways for potential public charging infrastructure: The Federal Government could provide charging at publicly accessible Federal facilities such as post offices, Veterans Affairs buildings, Federal historic sites/monuments/parks, military facilities, Social Security Administration offices, etc. There are, for example, more than 50,000 post offices in the United States. On a related front, the Federal Government, through the Federal interstate highway system, might provide land, financing, or other kinds of support for high-speed EV charging at key interstate exits that would serve both travelers and local residents. DOE should examine these and related options including new direction under the 2015 Fixing America's Surface Transportation Act (FAST Act) for Federal employee vehicle</p>	<p>DOE recognizes the opportunity for additional national charging infrastructure, and will work with Federal Sites where budgeting and policy allow.</p>

SEAB Recommendation	DOE Response
<p>charging, as discussed below.</p> <p>e. Prioritize U.S. Postal Service opportunity: USPS should take advantage of its need to replace its light-duty vehicle fleet to maximize the deployment of AFVs. There is resistance to the adoption of AFVs because of their higher incremental cost and USPS's precarious financial standing. At a time when USPS has discussed ending Saturday delivery of mail to cut costs, it is understandably difficult to contemplate increasing capital costs for new vehicles. Nevertheless, USPS operates the Nation's largest fleet of vehicles, and for the reasons discussed above, it presents a significant opportunity for the Federal Government to promote the use of AFVs, and in the process help bring the costs of AFVs in line with those of conventional vehicles. The challenge of higher incremental costs stems in part from the USPS' NGDV purpose-built design. The USPS argument citing higher procurement costs for EVs may be misplaced given the recent pricing for the Chevrolet Volt and the Nissan LEAF. Incremental costs could be minimized if vendors are rewarded for proposals that use an existing, commercially available EV powertrain configuration. Additionally, as part of its solicitation of 180,000 NGDVs, USPS should reward vendors that offer EV procurement options that can also be tailored to regional needs. Soliciting bids for a single, 50-state NGDV performance specification unnecessarily increases the cost of an EV option by requiring the battery pack to be oversized to meet the USPS' most challenging delivery route. Rather than a one-size-fits-all specification, the USPS should reward vendors that offer an EV specification with "plug-and-play" optionality to adjust the size of battery packs to minimize overall procurement costs. A USPS-DOE analysis of regional variations would assist with identifying how many EVs need a certain battery pack size. Any EV bid should also account for the residual value of used batteries and identify a process for the vendor to repurchase or credit USPS for the used batteries. Finally, USPS should evaluate increased driver satisfaction and productivity that may occur with EVs. Anecdotal evidence suggests there are driver benefits attributable to significantly lower vehicle vibration, a lack of engine noise, and no vehicle exhaust.</p>	<p>DOE has offered support to USPS in their vehicle decisions.</p>
<p>3. Recommendations to Increase Understanding and Awareness of Alternative Fuel Vehicles</p> <p>a. Examine variability in vehicle usage: GSA and FEMP should work together to identify, and periodically publish, trends within the Federal fleet, including travel patterns measured as daily vehicle miles traveled, fuel, and electricity prices. Evaluations of specific fleets, and more</p>	<p>FEMP and GSA expect to complete these types of evaluations using detailed vehicle asset level data required for FY17 reporting (December 2017). Additionally, Federal agencies are currently undertaking a Vehicle</p>

SEAB Recommendation	DOE Response
<p>specifically how certain employee classifications use vehicles, would be used to create more tailored AFV procurement strategies/plans.</p>	<p>Allocation Methodology survey, which will identify many travel patterns (DATE).</p>
<p>b. Develop new pilot programs: Documenting, disseminating, and encouraging additional AFV pilot projects can help agencies identify more creative ways to meet the mandate of E.O. 13693. As explained above, in 2014, the Los Angeles Air Force Base became the first Federal facility to replace 100 percent of its general-purpose vehicle fleet with PEVs. The project is not just a demonstration of the ability of AFVs to meet a wide range of transportation needs, but also demonstrates the ability of a fleet of plug-in vehicles to provide power and services to the local electrical grid. The vehicle chargers support the vehicles' Vehicle-to-Grid capabilities, and the vehicles on the base can provide the grid with sufficient power for nearly 150 homes, enhancing grid reliability while promoting energy security and reducing vehicle emissions. FEMP and GSA should work together to identify additional opportunities for the Federal Government to initiate pilot programs to promote the use of AFVs, including PEVs, within the Federal fleet. Like the Los Angeles Air Force Base program, these pilot projects can demonstrate the capabilities of AFVs and identify how to overcome any challenges related to their use.</p>	<p>DOE will work with agencies to implement pilot programs at their request, and will expand to support increases in agency demand.</p>
<p>c. Establish support systems for fleet managers: EV user groups (both online and in person) can increase education of Federal fleet managers on EVs and charging stations and should be expanded. These allow managers and employees to share best practices and respond to questions. Existing databases (DOE, Database of State Incentives for Renewables and Efficiency [DSIRE], FEMP sustainable fleet, and Alternative Fuels Data Center [AFDC]) should be expanded to be as comprehensive, up-to-date, and solution-oriented as possible, e.g., lifetime cost comparison of EVs to their gasoline or diesel counterparts, utility rates, financing and education programs, research, development, and demonstration (RD&D) programs, and other incentives. The High-Efficiency Truck Users Forum (HTUF) is one such example. HTUF is a national program of private and public fleets that encourages production and use of medium- and heavy-duty high-efficiency trucks and buses.160 HTUF has been operated by CALSTART for about a decade in partnership with, and under contract to, the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC).</p>	<p>FEMP has used the INTERFUELS working group as a monthly support system for fleet managers to share best practices and respond to questions since 1991.</p>

SEAB Recommendation	DOE Response
<p data-bbox="191 228 1346 269">4. Recommendations to Support AFV Charging for Federal Employees</p> <p data-bbox="191 302 1346 829">a. Advance new FAST Act authority for Federal employee vehicle charging: The FAST Act, discussed above, contains explicit authorization from Congress for Federal agencies to deploy charging stations at Federal facilities for use in charging personal EVs, on a reimbursable basis. The Council on Environmental Quality (CEQ) is now working on guidelines implementing the legislative language. DOE, GSA, CEQ, and Office of Management and Budget (OMB) should identify any remaining financing, bureaucratic oversight, and other potential obstacles to the Federal Government offering employees and contractors workplace charging. DOE’s Idaho National Laboratory recently reported results of an analysis from the largest collection of light-duty PEV and charging infrastructure demonstrations in the world. The key finding was that public charging infrastructure is not needed everywhere to enable EV adoption. Instead, the focus should be on building charging infrastructure at homes, workplaces, and public “hot spots” that serve multiple venues. In addition, DOE’s Workplace Charging Challenge reports that more than 80 percent of charging takes place at home or the workplace and that employers that provide charging have six times the number of people driving a PEV than those without charging infrastructure.</p> <p data-bbox="191 870 1346 1260">As a major employer, the Federal Government should offer workplace charging. The non-postal Federal workforce grew to more than 2.1 million in FY 2015. For many of these employees, their daily commute is less than 40 miles, and their vehicles sit idle during the workday. As such, it could be a less expensive option to pursue grade Level-1 charging infrastructure as a mechanism to incentivize Federal employees to buy EVs. Level-1 charging translates into about 4.5 miles of range per hour of charging. If a Federal employee’s EV sits for 8 hours, it should have more than enough charge for a return trip home for many employees. With the proliferation of solar photovoltaic electricity generation, there is also growing interest in identifying new sources of electricity demand during daylight hours to avoid solar electricity curtailment tied to oversupply. Workplace charging is a valuable strategy for creating just such demand.</p> <p data-bbox="191 1300 1346 1401">CEQ and GSA should also review Federal property and building procurement and leasing regulations and either require or incentivize prospective bidders to include some amount of Level-1 workplace charging in bids. Charging infrastructure also supports other sustainability</p>	<p data-bbox="1346 228 1929 334">DOE supports CEQ as they advocate agencies to install equipment to fulfil this recommendation.</p>

SEAB Recommendation	DOE Response
<p>program goals as adding vehicle infrastructure can provide additional Leadership in Energy and Environmental Design certification benefits.</p> <p>b. Add AFVs as part of the U.S. Government Rental Car Program: The U.S. Government Rental Car Agreement Number 4 governs the renting of vehicles (passenger cars, sports utility vehicles, station wagons, passenger vans, and small pick-up trucks) by military members, employees of the Federal Government, and USPS employees while in official travel status. DOE, GSA, CEQ, and OMB should review the U.S. Government Rental Car Program and either require or incentivize rental car companies to bid AFV options into the central database on a daily basis. Federal travelers should then be encouraged to use the AFV option, when available.</p>	<p>GSA topic.</p>

SECTION 9: Federal Technology Test Beds

RECOMMENDATION: Expand the role of military bases and Federal buildings as technology test beds.

SEAB Recommendation	DOE Response
<p>1. DOE should create a focused program within the Office of Energy Efficiency and Renewable Energy (EERE) to address late-stage “innovation” (pre-product technology development) and “translation” (pre-commercial product development), with an emphasis on technology demonstrations in government facilities.</p> <p>DOE, through its Building Technologies Office, should lead a government-wide effort to support late-stage “innovation” and “translation” of energy technologies for the built environment. Such technologies cover a number of areas, including energy assessment and decision-making tools; components and equipment; systems approaches to energy management and control; and integration of energy supply and demand. Although DOE supports many of these technologies at either end of the technology-maturation continuum (research and diffusion), it does not support the important intermediate stages of pre-product technology development (late-stage innovation), and pre-commercial product development (translation). Technology demonstration and validation are key to filling this critical gap. Technologies for the built environment face a number of impediments to commercialization and widespread adoption. If these technologies are to transition successfully to the marketplace, they will need to undergo extensive demonstration and validation in real buildings. The Federal Government’s portfolio of buildings</p>	<p>FEMP is establishing a coordination effort to work with the other EERE offices to effectively implement this effort. Thus, DOE concurs that this is a worthwhile endeavor. However, DOE believes that doing this effort through the technology offices with FEMP coordination makes good sense, keeping the technology experts involved.</p>

SEAB Recommendation	DOE Response
<p>is ideally suited for this activity.</p> <p>To start, DOE’s EERE should explicitly connect the Building Technologies Office’s support for emerging technologies (technology push) to the dem-val activities in operational buildings in DOD, GSA, and elsewhere (demand pull). The ESTCP-SunShot partnership, albeit limited, is a model. EERE should ensure that, through the appropriate incentives and feedback loops, the lessons learned and opportunities identified through this real-world testing in buildings serve to inform the work of the Building Technologies Office.</p> <p>More broadly, DOE should foster and “own” building energy dem-val activities across the Federal Government through high-level leadership, coordination, and shared funding. DOE should take advantage of, not duplicate, what DOD’s Energy Test Bed and GSA’s Green Proving Ground are doing: as large facility owners, DOD and GSA (and possibly other entities such as the U.S. Postal Service) are uniquely positioned to carry out this dem-val role. However, the Federal Government’s building energy dem-val efforts, including a host of less formal efforts that are ongoing, require high-level direction and coordination. Some of these efforts also require modest financial support from DOE. Dem-val of technologies for the built environment is not seen as a key to missions in most agencies. In DOD, in particular, support for the Energy Test Bed, which is run out of the Office of the Secretary of Defense, is fragile (many in DOD see it as DOE’s job), and the budget is likely to continue to decline.</p>	
<p>2. DOE should identify one or more ways to address the risk that use of advanced technology poses to ESCOs and other third-party financiers.</p> <p>DOE should ask an outside body of experts such as the National Research Council to examine this issue and evaluate alternative options for addressing it. This process need not entail a lengthy study. Rather, the National Research Council (or other body) could convene a workshop of stakeholders and financial experts to examine the issue. Alternatively, DOE might suggest that the White House Office of Science and Technology Policy task the Science and Technology Policy Institute with examining the issue.</p>	<p>DOE concurs. The Federal Energy Management Program (FEMP) works with agencies to document case studies and demonstrations to promote main stream technology adoption. Supply chain, maintenance support, reliability and costs are considerations which are currently being addressed by FEMP with respect to renewable energy technologies. The risks associated with new technologies is addressed through pilot projects and demonstration sites.</p>

SEAB Recommendation	DOE Response
<p>3. DOE should identify and facilitate other mechanisms to speed the deployment government-wide of innovative energy technologies for the built environment, including (but not limited to) the technologies demonstrated in Federal facilities.</p> <p>The Federal Government represents an enormous potential market for innovative energy technologies for the built environment, including, but not limited to, technologies demonstrated in Federal buildings. To leverage this demand pull, EERE should work with DOD and GSA to set “performance targets” for various building energy services (heating, cooling, lighting, indoor air quality, etc.). The performance targets should be technology-agnostic to give industry maximum flexibility to innovate. The performance targets should be higher than those associated with current EERE energy efficiency standards, and the process for setting the performance targets should be flexible to allow for a continued raising of the bar.</p> <p>To leverage the broader commercial market for innovative building energy technologies, EERE should work with organizations that provide third-party certification for green buildings. The goal would be to have technologies that have successfully gone through the DOD and GSA test bed programs recognized by the widely known building certification programs.</p>	<p>DOE is working this effort through FEMP, who is coordinating with GSA, as well as with the other technology offices to utilize the Federal footprint as a demonstration area for new technologies.</p>

SECTION 10: Federal Energy Management Program

RECOMMENDATION: Strengthen FEMP’s budget, standing, and relationships.

SEAB Recommendation	DOE Response
<p>1. Following a careful review of the overarching challenges and opportunities in Federal energy management (a number of which are articulated in this report) the next administration should seek significant increases over time in FEMP’s budget beginning in FY 2018. The incoming Secretary should review FEMP’s budget, both with respect to current work and high priority areas for potential additional funding. Based on discussions with FEMP officials, there are priority funding areas, discussed above, involving the Federal Energy Efficiency Fund, Technology Demonstration and Validation Efforts, Metering Acceleration, Data Management, Federal Utility Bill Management, and Cybersecurity. There are a number of other areas discussed in this report where additional funding would advance key Federal energy management goals.</p>	<p>In order to accomplish the recommendations within the SEAB report, FEMP’s budget will need to be increased. Several of the SEAB recommendations will be included in the FY18 budget proposal from FEMP.</p>

SEAB Recommendation	DOE Response
2. The incoming administration should review OMB's approach to key aspects of FEMP's work, including, among other things, ESPC scoring and scope.	FEMP works closely with OMB.
3. The incoming administration should review and determine an approach to cybersecurity in FEMP's work. The current FEMP office has suggested the creation of a task force to review these issues.	The location of cyber-security development should be identified within DOE, and then FEMP should support the effort accordingly.
4. The incoming administration should review the activities of the CEQ CSO in the area of Federal energy management and the role that FEMP might play in his or her work. This review should also include the role of individual agency CSOs.	The Agency CSO should be developed into a full-time position.
5. The incoming DOE Secretary should review the current organizational placement and structure of FEMP within DOE's EERE, but the Task Force believes that FEMP's placement within EERE is compelling programmatically.	The location of FEMP with EERE FEMP into a position to have expertise to assist Federal Agencies.
6. The incoming Secretary of Energy should review the work of the DOE General Counsel's Office in addressing key legal issues facing FEMP's programmatic efforts. This should involve consideration of the role of other Federal agency counsels, procurement officials, and other DOE offices focused on how to improve and accelerate the resolution of key legal issues in Federal energy management. This might involve forming a "council of (agency) counsels" to address these matters.	FEMP concurs. However, FEMP will need EOP to engage on this effort.
7. FEMP should expand its efforts to integrate Federal, State, and private sector energy management including in office buildings, data centers, hospitals, vehicle fleets etc. and, as appropriate, work to build common methods and mechanisms.	FEMP concurs. FEMP should retain its Federal focus, but develop all efforts with the intentions to prove national benefits.
8. FEMP should look for opportunities to promote energy technology demonstration and validation ("dem-val") efforts, currently led by DOD and GSA, within DOE and other agencies. This should include finding means to incorporate technologies advanced by dem-val efforts in Federal ESPCs.	FEMP will work with other EERE programs for this implementation.

